WHAT IS CLAIMED IS:

- 1. A dye composition for dyeing keratin fibres, comprising, in a medium that is suitable for dyeing, at least one cationic tertiary para-phenylenediamine containing a pyrrolidine nucleus and at least one surfactant selected from oxyalkylenated carboxylic ether acids and their salts and monoglycerolated or polyglycerolated non-ionic surfactants and mixtures thereof.
- 2. The composition of claim 1, wherein the cationic tertiary para-phenylenediamine corresponds to formula (I):

$$R_3$$
 R_2
 R_1
 R_2
 R_1
 R_2
 R_1
 R_2
 R_1
 R_2
 R_1
 R_2
 R_3
 R_2
 R_3
 R_2
 R_3
 R_2
 R_3
 R_2
 R_3
 R_3
 R_2
 R_3
 R_3

in which

n ranges from 0 to 4, it being understood that when n is greater than or equal to 2, then the radicals R_1 may be identical or different,

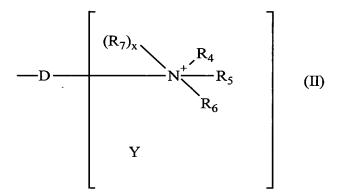
R₁ represents a halogen atom; a C₁-C₆ aliphatic or alicyclic, saturated or unsaturated hydrocarbon-based chain, the chain possibly containing one or more oxygen, nitrogen, silicon or sulphur atoms or an SO₂ group, and possibly being substituted with one or more hydroxyl or amino radicals; an onium radical Z, the radical R₁ not comprising a peroxide bond or diazo, nitro or nitroso radicals,

R₂ represents an onium radical Z or a radical -X-C=NR₈-NR₉R₁₀ in which X represents an oxygen atom or a radical -NR₁₁ and R₈, R₉, R₁₀ and R₁₁ represent a hydrogen atom, a C₁-C₄ alkyl radical or a C₁-C₄ hydroxyalkyl radical,

R₃ represents a hydrogen atom or a hydroxyl radical.

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- 3. The composition of claim 2, wherein the cationic tertiary para-phenylenediamine is such that n is equal to 0.
- 4. The composition of claim 2, wherein the cationic tertiary para-phenylenediamine is such that n is equal to 1 and R_1 is chosen from the group formed by a halogen atom; a C_1 - C_6 aliphatic or alicyclic, saturated or unsaturated hydrocarbon-based chain; one or more carbon atoms possibly being replaced with an oxygen, nitrogen, silicon or sulphur atom or with an SO_2 group, the radical R_1 not comprising a peroxide bond or diazo, nitro or nitroso radicals.
- 5. The composition of claim 2, wherein the cationic tertiary para-phenylenediamine is such that R_1 is chosen from chlorine, bromine and C_1 - C_4 alkyl, C_1 - C_4 hydroxyalkyl, C_1 - C_4 aminoalkyl, C_1 - C_4 alkoxy or C_1 - C_4 hydroxyalkoxy radicals.
- 6. The composition of claim 5, wherein the cationic tertiary para-phenylenediamine is such that R_1 is chosen from a methyl, hydroxymethyl, 2-hydroxyethyl, 1,2-dihydroxyethyl, methoxy, isopropyloxy or 2-hydroxyethoxy radical.
- 7. The composition of claim 2, wherein the cationic tertiary para-phenylenediamine is such that R_2 represents the onium radical Z corresponding to formula (II)



in which

D is a single bond or a linear or branched C₁-C₁₄ alkylene chain which may contain one or more hetero atoms chosen from oxygen, sulphur and nitrogen, and which may be substituted with one or more hydroxyl, C₁-C₆ alkoxy or amino radicals, and which may bear one or more ketone functions;

- R₄, R₅ and R₆, taken separately, represent a C₁-C₁₅ alkyl radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; a (C₁-C₆)alkoxy(C₁-C₆)alkyl radical; an aryl radical; a benzyl radical; a C₁-C₆ amidoalkyl radical; a tri(C₁-C₆)alkylsilane(C₁-C₆)alkyl radical; a C₁-C₆ aminoalkyl radical; a C₁-C₆ aminoalkyl radical in which the amine is mono- or disubstituted with a C₁-C₄ alkyl, (C₁-C₆)alkylcarbonyl, amido or (C₁-C₆)alkylsulphonyl radical; or
- R₄, R₅ and R₆ together, in pairs, form, with the nitrogen atom to which they are attached, a saturated 4-, 5-, 6- or 7-membered carbon-based ring optionally containing one or more hetero atoms, the cationic ring possibly being substituted with a halogen atom, a hydroxyl radical, a C₁-C₆ alkyl radical, a C₁-C₆ monohydroxyalkyl radical, a C₂-C₆ polyhydroxyalkyl radical, a C₁-C₆ alkoxy radical, a tri(C₁-C₆)alkylsilane(C₁-C₆)alkyl radical, an amido radical, a carboxyl radical, a (C₁-C₆)alkylcarbonyl radical, a thio (-SH) radical, a C₁-C₆ thioalkyl (-R-SH) radical, a (C₁-C₆)alkylthio radical, an amino radical mono- or disubstituted with a (C₁-C₆)alkyl, (C₁-C₆)alkylcarbonyl, amido or (C₁-C₆)alkylsulphonyl radical;
- R₇ represents a C₁-C₆ alkyl radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; an aryl radical; a benzyl radical; a C₁-C₆ aminoalkyl radical; a C₁-C₆ aminoalkyl radical in which the amine is mono- or disubstituted with a (C₁-C₆)alkyl, (C₁-C₆)alkylcarbonyl, amido or (C₁-C₆)alkylsulphonyl radical; a C₁-C₆ carboxyalkyl radical; a C₁-C₆ carbamylalkyl radical; a C₁-C₆ trifluoroalkyl radical; a tri(C₁-C₆)alkylsilane(C₁-C₆)alkyl radical; a C₁-C₆ sulphonamidoalkyl radical; a (C₁-C₆)alkylcarboxy(C₁-C₆)alkyl radical; a (C₁-C₆)alkyl radical; an N-(C₁-C₆)alkyl radical; an N-(C₁-C₆)alkyl radical;

when x = 0, then the linker arm is attached to the nitrogen atom bearing the radicals R_4 to R_6 ,

x is 0 or 1,

when x = 1, then two of the radicals R₄ to R₆ form, together with the nitrogen atom to which they are attached, a 4-, 5-, 6- or 7-membered saturated ring and D is linked to a carbon atom of the saturated ring;

Y is a counterion.

- 8. The composition of claim 7, wherein the cationic tertiary para-phenylenediamine is such that R_2 corresponds to formula II in which x is equal to 0 and R_4 , R_5 and R_6 , separately, are preferably chosen from a C_1 - C_6 alkyl radical, a C_1 - C_4 monohydroxyalkyl radical, a C_2 - C_4 polyhydroxyalkyl radical, a $(C_1$ - $C_6)$ alkoxy $(C_1$ - $C_4)$ alkyl radical, a C_1 - C_6 amidoalkyl radical, a tri $(C_1$ - $C_6)$ alkylsilane $(C_1$ - $C_6)$ alkyl radical, or R_4 and R_5 together form an azetidine, pyrrolidine, piperidine, piperazine or morpholine ring, R_6 being chosen in this case from a C_1 - C_6 alkyl radical; a C_1 - C_6 monohydroxyalkyl radical; a C_2 - C_6 polyhydroxyalkyl radical; a C_1 - C_6 aminoalkyl radical, an aminoalkyl radical mono- or disubstituted with a $(C_1$ - C_6)alkyl, $(C_1$ - C_6)alkylcarbonyl, amido or $(C_1$ - C_6)alkylsulphonyl radical; a C_1 - C_6 carbamylalkyl radical; a tri $(C_1$ - C_6)alkylsilane $(C_1$ - C_6)alkyl radical; a $(C_1$ - C_6)alkyl radical; a $(C_1$ - C_6)alkylcarboxy $(C_1$ - C_6)alkyl radical; a $(C_1$ - C_6)alkylcarbonyl $(C_1$ - C_6)alkyl radical; an N- $(C_1$ - C_6)alkylcarbamyl $(C_1$ - C_6)alkyl radical.
- 9. The composition of claim 7, wherein the cationic tertiary para-phenylenediamine is such that R₂ corresponds to formula II in which x is equal to 1 and R₇ is chosen from a C₁-C₆ alkyl radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; a C₁-C₆ aminoalkyl radical; a C₁-C₆ aminoalkyl radical in which the amine is mono- or disubstituted with a (C₁-C₆)alkyl, (C₁-C₆)alkylcarbonyl, amido or (C₁-C₆)alkylsulphonyl radical; a C_1 - C_6 carbamylalkyl radical; a tri $(C_1$ - C_6)alkylsilane $(C_1$ - C_6)alkyl radical; a $(C_1$ -C₆)alkylcarboxy(C₁-C₆)alkyl radical; a (C₁-C₆)alkylcarbonyl(C₁-C₆)alkyl radical; an N-(C₁-C₆)alkylcarbamyl(C₁-C₆)alkyl radical; R₄ and R₅ together form an azetidine, pyrrolidine, piperidine, piperazine or morpholine ring, R₆ being chosen in this case from a C_1 - C_6 alkyl radical; a C_1 - C_6 monohydroxyalkyl radical; a C_2 - C_6 polyhydroxyalkyl radical; a C₁-C₆ aminoalkyl radical, a C₁-C₆ aminoalkyl radical in which the amine is mono- or disubstituted with a (C₁-C₆)alkyl, (C₁-C₆)alkylcarbonyl, amido or (C₁-C₆)alkylsulphonyl radical; a C₁-C₆ carbamylalkyl radical; a tri(C₁-C₆)alkylsilane(C₁-C₆)alkyl radical; a (C₁- C_6)alkylcarboxy(C_1 - C_6)alkyl radical; a (C_1 - C_6)alkylcarbonyl(C_1 - C_6)alkyl radical; an N- (C_1-C_6) alkylcarbamyl (C_1-C_6) alkyl radical.

- 10. The composition of claim 7, wherein the cationic tertiary para-phenylenediamine is such that D is a single bond or an alkylene chain that may be substituted.
- 11. The composition of claim 2, wherein the cationic tertiary para-phenylenediamine is such that R_2 is a trialkylammonium radical.
- 12. The composition of claim 2, wherein the cationic tertiary para-phenylenediamine is such that R₂ represents the onium radical Z corresponding to formula (III)

(III)

in which

D is a single bond or a linear or branched C₁-C₁₄ alkylene chain that may contain one or more hetero atoms chosen from oxygen, sulphur and nitrogen, and that may be substituted with one or more hydroxyl, C₁-C₆ alkoxy or amino radicals, and that may bear one or more ketone functions;

the ring members E, G, J and L, which may be identical or different, represent a carbon, oxygen, sulphur or nitrogen atom to form a pyrrole, pyrazole, imidazole, triazole, oxazole, isoxazole, thiazole or isothiazole ring,

q is an integer between 0 and 4 inclusive;

o is an integer between 0 and 3 inclusive;

q+o is an integer between 0 and 4;

the radicals R₈, which may be identical or different, represent a halogen atom, a hydroxyl radical, a C₁-C₆ alkyl radical, a C₁-C₆ monohydroxyalkyl radical, a C₂-C₆ polyhydroxyalkyl radical, a C₁-C₆ alkoxy radical, a tri(C₁-C₆)alkylsilane(C₁-C₆)alkyl radical, an amido radical, a carboxyl radical, a C₁-C₆ alkylcarbonyl radical, a thio radical, a C₁-C₆ thioalkyl radical, a (C₁-C₁-C₂)

 C_6)alkylthio radical, an amino radical, an amino radical mono- or disubstituted with a (C_1-C_6) alkyl, (C_1-C_6) alkylcarbonyl, amido or (C_1-C_6) alkylsulphonyl radical; a C_1-C_6 monohydroxyalkyl radical or a C_2-C_6 polyhydroxyalkyl radical; it being understood that the radicals R_8 are borne by a carbon atom,

the radicals R₉, which may be identical or different, represent a C₁-C₆ alkyl radical, a C₁-C₆ monohydroxyalkyl radical, a C₂-C₆ polyhydroxyalkyl radical, a tri(C₁-C₆)alkylsilane(C₁-C₆)alkyl radical, a (C₁-C₆)alkoxy(C₁-C₆)alkyl radical, a C₁-C₆ carbamylalkyl radical, a (C₁-C₆)alkylcarboxy(C₁-C₆)alkyl radical or a benzyl radical; it being understood that the radicals R₉ are borne by a nitrogen atom,

R₁₀ represents a C₁-C₆ alkyl radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; an aryl radical; a benzyl radical; a C₁-C₆ aminoalkyl radical, a C₁-C₆ aminoalkyl radical in which the amine is substituted with a (C₁-C₆)alkyl, (C₁-C₆)alkylcarbonyl, amido or (C₁-C₆)alkylsulphonyl radical; a C₁-C₆ carboxyalkyl radical; a C₁-C₆ carbamylalkyl radical; a C₁-C₆ trifluoroalkyl radical; a tri(C₁-C₆)alkylsilane(C₁-C₆)alkyl radical; a C₁-C₆ sulphonamidoalkyl radical; a (C₁-C₆)alkylcarboxy(C₁-C₆)alkyl radical; a (C₁-C₆)alkylsulphonyl(C₁-C₆)alkyl radical; a (C₁-C₆)alkyl radical; a (C₁-C₆)alkyl radical; an N-(C₁-C₆)alkyl radical; an N-(C₁-C₆)alkyl radical;

x is 0 or 1

when x = 0, the linker arm D is attached to the nitrogen atom, when x = 1, the linker arm D is attached to one of the ring members E, G, J or L,

Y is a counterion.

13. The composition of claim 12, wherien the cationic tertiary para-phenylenediamine is such that the ring members E, G, J and L form an imidazole ring.

- 14. The composition of claim 12, wherein the cationic tertiary para-phenylenediamine is such that x is equal to 0 and D is a single bond or an alkylene chain that may be substituted.
- 15. The composition of claim 2, wherein the cationic tertiary para-phenylenediamine is such that R_2 represents an onium radical Z corresponding to formula (IV)

(IV)

in which:

D is a single bond or a linear or branched C₁-C₁₄ alkylene chain which may contain one or more hetero atoms chosen from an oxygen, sulphur or nitrogen atom, and which may be substituted with one or more hydroxyl, C₁-C₆ alkoxy or amino radicals, and which may bear one or more ketone functions;

the ring members E, G, J, L and M, which may be identical or different, represent a carbon, oxygen, sulphur or nitrogen atom and form a ring chosen from pyridine, pyrimidine, pyrazine, triazine and pyridazine rings;

p is an integer between 0 and 3 inclusive;

m is an integer between 0 and 5 inclusive;

p+m is an integer between 0 and 5;

 C_6)alkylthio radical, an amino radical, an amino radical substituted with a (C_1-C_6) alkyl, (C_1-C_6) alkylcarbonyl, amido or (C_1-C_6) alkylsulphonyl radical; a C_1-C_6 monohydroxyalkyl radical or a C_2-C_6 polyhydroxyalkyl radical; it being understood that the radicals R_{11} are borne by a carbon atom,

the radicals R₁₂, which may be identical or different, represent a C₁-C₆ alkyl radical, a C₁-C₆ monohydroxyalkyl radical, a C₂-C₆ polyhydroxyalkyl radical, a tri(C₁-C₆)alkylsilane(C₁-C₆)alkyl radical, a (C₁-C₆)alkoxy(C₁-C₆)alkyl radical, a C₁-C₆ carbamylalkyl radical, a (C₁-C₆)alkylcarboxy(C₁-C₆)alkyl radical or a benzyl radical; it being understood that the radicals R₁₂ are borne by a nitrogen atom,

R₁₃ represents a C₁-C₆ alkyl radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; an aryl radical; a benzyl radical; a C₁-C₆ aminoalkyl radical; a C₁-C₆ aminoalkyl radical in which the amine is mono- or disubstituted with a (C₁-C₆)alkyl, (C₁-C₆)alkylcarbonyl, amido or (C₁-C₆)alkylsulphonyl radical; a C₁-C₆ carboxyalkyl radical; a C₁-C₆ carbamylalkyl radical; a C₁-C₆ trifluoroalkyl radical; a tri(C₁-C₆)alkylsilane(C₁-C₆)alkyl radical; a C₁-C₆ sulphonamidoalkyl radical; a (C₁-C₆)alkylcarboxy(C₁-C₆)alkyl radical; a (C₁-C₆)alkylsulphinyl(C₁-C₆)alkyl radical; a (C₁-C₆)alkyl radical; a (C₁-C₆)alkyl radical; a (C₁-C₆)alkyl radical; a N-(C₁-C₆)alkyl radical; a N-(C₁-C₆)alkyl radical;

x is 0 or 1

when x = 0, the linker arm D is attached to the nitrogen atom, when x = 1, the linker arm D is attached to one of the ring members E, G, J, L or M,

Y is a counterion.

- 16. The composition of claim 15, wherein the ring members E, G, J, L and M form with the ring nitrogen a ring chosen from pyridine and pyrimidine rings.
- 17. The composition of claim 15, wherein the cationic tertiary para-phenylenediamine is such that x is equal to 0 and R_{11} is chosen from a hydroxyl radical, a C_1 - C_6 alkyl radical,

- a C_1 - C_6 monohydroxyalkyl radical, a C_2 - C_6 polyhydroxyalkyl radical, a C_1 - C_6 alkoxy radical, a $tri(C_1$ - C_6)alkylsilane(C_1 - C_6)alkyl radical, an amido radical, a C_1 - C_6 alkylcarbonyl radical, an amino radical mono- or disubstituted with a $(C_1$ - C_6)alkyl, $(C_1$ - C_6)alkylcarbonyl, amido or $(C_1$ - C_6)alkylsulphonyl radical; a C_1 - C_6 monohydroxyalkyl radical or a C_2 - C_6 polyhydroxyalkyl radical, and R_{12} is chosen from a C_1 - C_6 alkyl radical, a C_1 - C_6 monohydroxyalkyl radical, a C_2 - C_6 polyhydroxyalkyl radical, a $tri(C_1$ - C_6)alkylsilane(C_1 - C_6)alkyl radical, a $(C_1$ - C_6)alkoxy(C_1 - C_6)alkyl radical or a C_1 - C_6 carbamylalkyl radical.
- 18. The composition of claim 15, wherein the cationic tertiary para-phenylenediamine is such that x is equal to 1 and R_{13} is chosen from a C_1 - C_6 alkyl radical; a C_1 - C_6 monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; a C₁-C₆ aminoalkyl radical, a C₁-C₆ aminoalkyl radical in which the amine is mono- or disubstituted with a (C₁-C₆)alkyl, (C₁-C₆)alkylcarbonyl, amido or (C₁-C₆)alkylsulphonyl radical; a C₁-C₆ carbamylalkyl radical; a tri (C_1-C_6) alkylsilane (C_1-C_6) alkyl radical; a $(C_1-C$ C_6)alkylcarbonyl(C_1 - C_6)alkyl radical; an N-(C_1 - C_6)alkylcarbamyl(C_1 - C_6)alkyl radical; R_{11} is chosen from a hydroxyl radical, a C₁-C₆ alkyl radical, a C₁-C₆ monohydroxyalkyl radical, a C₂-C₆ polyhydroxyalkyl radical, a C₁-C₆ alkoxy radical, a tri(C₁-C₆)alkylsilane(C₁-C₆)alkyl radical, an amido radical, a C₁-C₆ alkylcarbonyl radical, an amino radical, an amino radical mono- or disubstituted with a (C₁-C₆)alkyl, (C₁-C₆)alkylcarbonyl, amido or (C₁-C₆)alkylsulphonyl radical; and R₁₂ is chosen from a C₁-C₆ alkyl radical, a C₁-C₆ monohydroxyalkyl radical, a C₂-C₆ polyhydroxyalkyl radical, a $tri(C_1-C_6)$ alkylsilane (C_1-C_6) alkyl radical, a (C_1-C_6) alkoxy (C_1-C_6) alkyl radical and a C_1-C_6 carbamylalkyl radical.
- 19. The composition of claim 15, wherein the cationic tertiary para-phenylenediamine is such that R_{11} , R_{12} and R_{13} are alkyl radicals that may be substituted.
- 20. The composition of claim 2, wherein the cationic tertiary para-phenylenediamine is such that the radical R_2 is a radical of formula -XP(O)(O-)OCH₂CH₂N⁺(CH₃)₃ in which X represents an oxygen atom or a radical -NR₁₄, R₁₄ representing a hydrogen, a C₁-C₄ alkyl radical or a hydroxyalkyl radical.
- 21. The composition of claim 2, wherein the cationic tertiary para-phenylenediamine is such that the radical R_2 is a guanidine radical of formula -X-C=NR₈-NR₉R₁₀, X represents

an oxygen atom or a radical -NR₁₁, R₈, R₉, R₁₀ and R₁₁ representing a hydrogen, a C_1 - C_4 alkyl radical or a C_1 - C_4 hydroxyalkyl radical.

- 22. The composition of claim 1, wherein the cationic tertiary para-phenylenediamine is chosen from the group formed by:
 - [1-(4-Aminophenyl)pyrrolidin-3-yl]trimethylammonium chloride;
 - [1-(4-Aminophenyl)pyrrolidin-3-yl]dimethyltetradecylammonium bromide;
 - N'-[1-(4-Aminophenyl)pyrrolidin-3-yl]-N,N-dimethyl guanidinium chloride;
 - N-[1-(4-Aminophenyl)pyrrolidin-3-yl] guanidinium chloride;
 - 3-[1-(4-Aminophenyl)pyrrolidin-3-yl]-1-methyl-3H-imidazol-1-ium chloride;
 - [1-(4-Aminophenyl)pyrrolidin-3-yl](2-hydroxyethyl)dimethylammonium chloride;
 - [1-(4-Aminophenyl)pyrrolidin-3-yl]dimethyl(3-trimethylsilanylpropyl)ammonium chloride;
 - [1-(4-Aminophenyl)pyrrolidin-3-yl](trimethylammoniumhexyl)dimethylammonium dichloride
 - [1-(4-Aminophenyl)pyrrolidin-3-yl]oxophosphorylcholine
 - {2-[1-(4-Aminophenyl)pyrrolidin-3-yloxy]ethyl}-trimethyl-ammonium chloride
 - 1-{2-[1-(4-Aminophenyl)pyrrolidin-3-yloxy]ethyl}-1-methyl-pyrrolidinium chloride
 - 3-{3-[1-(4-Aminophenyl)pyrrolidin-3-yloxy]propyl}-1-methyl-3H-imidazol-1-ium chloride
 - 1-{2-[1-(4-Aminophenyl)pyrrolidin-3-yloxy]ethyl}-1-methylpiperidinium chloride
 - 3-{3-[1-(5-Trimethylsilanylethyl-4-amino-3trimethylsilanylethylphenyl)pyrrolidin-3-yloxy]propyl}-1methyl-3H-imidazol-1-ium chloride
 - [1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]trimethylammonium chloride;

- [1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]dimethyltetradecylammonium chloride;
- N'-[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]-N,N-dimethyl guanidinium chloride;
- N-[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl] guanidinium chloride;
- 3-[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]-1-methyl-3H-imidazol-1-ium chloride;
- [1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl](2-hydroxyethyl)dimethylammonium chloride;
- [1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]dimethyl(3-trimethylsilanylpropyl ammonium chloride;
- [1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl](trrimethyl-ammoniumhexyl)dimethylammonium dichloride
- [1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]oxophosphorylcholine
- {2-[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yloxy]ethyl}trimethylammonium chloride
- 1-{2-[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yloxy]ethyl}-1-methyl-pyrrolidinium chloride
- 3-{3-[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yloxy]propyl}-1-methyl-3H-imidazol-1-ium chloride
- 1-{2-[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yloxy]ethyl}-1methylpiperidinium chloride
- [1-(4-Amino-3-trimethylsilanylethylphenyl)pyrrolidin-3-yl]trimethylammonium chloride
- 3-[1-(4-Amino-3-trimethylsilanylethylphenyl)pyrrolidin-3-yl]-1-methyl-3H-imidazol-1-ium chloride
- 3-{3-[1-(4-Amino-3-trimethylsilanylethylphenyl)pyrrolidin-3-yloxy]propyl}-1-methyl-3H-imidazol-1-ium chloride

- [1-(5-Trimethylsilanylethyl-4-amino-3-trimethylsilanylethylphenyl)pyrrolidin-3-yl]trimethylammonium chloride
- 3-[1-(5-Trimethylsilanylethyl-4-amino-3-trimethylsilanyl-ethylphenyl)pyrrolidin-3-yl]-1-methyl-3H-imidazol-1-ium chloride
- 1'-(4-Aminophenyl)-1-methyl[1,3']bipyrrolidinyl-1-ium chloride;
- 1'-(4-Amino-3-methylphenyl)-1-methyl[1,3']bipyrrolidinyl-1-ium chloride;
- 3-{[1-(4-Aminophenyl)pyrrolidin-3-ylcarbamoyl]methyl}-1-methyl-3H-imidazol-1-ium chloride;
- 3-{[1-(4-Aminophenyl)pyrrolidin-3-ylcarbamoyl]methyl}-1-methyl-3H- imidazol-1-ium chloride;
- 3-[1-(4-Aminophenyl)pyrrolidin-3-yl]-1-(3-trimethylsilanylpropyl)-3H-imidazol-1-ium chloride;
- 3-[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]-1-(3-trimethylsilanylpropyl)-3H-imidazol-1-ium chloride;
- [1-(4-Aminophenyl)pyrrolidin-3-yl]ethyldimethylammonium chloride;
- [1-(4-Aminophenyl)pyrrolidin-3-yl]ethyldimethylammonium iodide;
- [1-(4-Aminophenyl)pyrrolidin-3-yl]propyldimethylammonium iodide;
- [1-(4-Aminophenyl)pyrrolidin-3-yl]propyldimethylammonium bromide;
- [1-(4-Aminophenyl)pyrrolidin-3-yl]propyldimethylammonium methosulphate;
- [1-(4-Aminophenyl)pyrrolidin-3-yl]butyldimethylammonium iodide;
- [1-(4-Aminophenyl)pyrrolidin-3-yl]pentyldimethylammonium iodide;
- [1-(4-Aminophenyl)pyrrolidin-3-yl]hexyldimethylammonium iodide;
- [1-(4-Aminophenyl)pyrrolidin-3-yl]heptyldimethylammonium iodide;
- [1-(4-Aminophenyl)pyrrolidin-3-yl]octyldimethylammonium iodide;
- [1-(4-Aminophenyl)pyrrolidin-3-yl]decyldimethylammonium iodide;
- [1-(4-Aminophenyl)pyrrolidin-3-yl]hexadecyldimethylammonium iodide;

- [1-(4-Aminophenyl)pyrrolidin-3-yl]hydroxyethyldimethylammonium chloride;
- [1-(4-Aminophenyl)pyrrolidin-3-yl]hydroxyethyldimethylammonium iodide.
- 23. The composition of claim 1, wherein the cationic tertiary para-phenylenediamine is chosen from the group formed by:
 - [1-(4-Aminophenyl)pyrrolidin-3-yl]trimethylammonium chloride;
 - [1-(4-Aminophenyl)pyrrolidin-3-yl]dimethyltetradecylammonium bromide;
 - N'-[1-(4-Aminophenyl)pyrrolidin-3-yl]-N,N-dimethyl guanidinium chloride;
 - N-[1-(4-Aminophenyl)pyrrolidin-3-yl] guanidinium chloride;
 - 3-[1-(4-Aminophenyl)pyrrolidin-3-yl]-1-methyl-3H-imidazol-1-ium chloride;
 - [1-(4-Aminophenyl)pyrrolidin-3-yl](2-hydroxyethyl)dimethylammonium chloride;
 - [1-(4-Aminophenyl)pyrrolidin-3-yl]dimethyl(3-trimethylsilanylpropyl)ammonium chloride;
 - [1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]trimethylammonium chloride;
 - [1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]dimethyltetradecylammonium chloride;
 - N'-[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]-N,N-dimethyl guanidinium chloride;
 - N-[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl] guanidinium chloride;
 - 3-[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]-1-methyl-3H-imidazol-1-ium chloride;
 - [1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl](2-hydroxyethyl)dimethylammonium chloride;
 - [1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]dimethyl(3-trimethylsilanylpropylammonium chloride;
 - 1'-(4-Aminophenyl)-1-methyl[1,3']bipyrrolidinyl-1-ium chloride;
 - 1'-(4-Amino-3-methylphenyl)-1-methyl[1,3']bipyrrolidinyl-1-ium chloride;

- 3-{[1-(4-Aminophenyl)pyrrolidin-3-ylcarbamoyl]methyl}-1-methyl-3H-imidazol-1-ium chloride;
- 3-{[1-(4-Amino-3-methylphenyl)pyrrolidin-3-ylcarbamoyl]methyl}-1-methyl-3H-imidazol-1-ium chloride;
- 3-[1-(4-Aminophenyl)pyrrolidin-3-yl]-1-(3-trimethylsilanylpropyl)-3H-imidazol-1-ium chloride;
- 3-[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]-1-(3-trimethylsilanylpropyl)-3H-imidazol-1-ium chloride;
- [1-(4-Aminophenyl)pyrrolidin-3-yl]ethyldimethylammonium chloride;
- [1-(4-Aminophenyl)pyrrolidin-3-yl]ethyldimethylammonium iodide;
- [1-(4-Aminophenyl)pyrrolidin-3-yl]propyldimethylammonium iodide;
- [1-(4-Amin ophenyl) pyrrolidin-3-yl] propyldimethylammonium bromide;
- $[1\hbox{-}(4\hbox{-}Amin ophenyl) pyrrolidin-3-yl] propyldimethylammonium\ methosulphate;$
- [1-(4-Aminophenyl)pyrrolidin-3-yl]butyldimethylammonium iodide;
- [1-(4-Aminophenyl)pyrrolidin-3-yl]pentyldimethylammonium iodide;
- [1-(4-Aminophenyl)pyrrolidin-3-yl]hexyldimethylammonium iodide;
- [1-(4-Aminophenyl)pyrrolidin-3-yl]heptyldimethylammonium iodide;
- [1-(4-Aminophenyl)pyrrolidin-3-yl]octyldimethylammonium iodide;
- [1-(4-Aminophenyl)pyrrolidin-3-yl]decyldimethylammonium iodide;
- [1-(4-Aminophenyl)pyrrolidin-3-yl]hexadecyldimethylammonium iodide;
- [1-(4-Aminophenyl)pyrrolidin-3-yl]hydroxyethyldimethylammonium chloride;
- $[1-(4-Amin ophenyl) pyrrolidin-3-yl] hydroxyethyldimethylammonium\ iodide.$
- 24. The composition of claim 1, wherein the cationic tertiary para-phenylenediamine is chosen from the group formed by:
 - [1-(4-Aminophenyl)pyrrolidin-3-yl]trimethylammonium chloride;
 - [1-(4-Aminophenyl)pyrrolidin-3-yl]dimethyltetradecylammonium bromide;
 - N'-[1-(4-Aminophenyl)pyrrolidin-3-yl]-N,N-dimethyl guanidinium chloride;

- N-[1-(4-Aminophenyl)pyrrolidin-3-yl] guanidinium chloride;
- 3-[1-(4-Aminophenyl)pyrrolidin-3-yl]-1-methyl-3H-imidazol-1-ium chloride;
- [1-(4-Aminophenyl)pyrrolidin-3-yl](2-hydroxyethyl)dimethylammonium chloride;
- [1-(4-Aminophenyl)pyrrolidin-3-yl]dimethyl(3-trimethylsilanylpropyl)ammonium chloride;
- [1-(4-Aminophenyl)pyrrolidin-3-yl](trimethylammoniumhexyl)dimethylammonium dichloride;
- 1'-(4-Aminophenyl)-1-methyl[1,3']bipyrrolidinyl-1-ium chloride
- 3-[1-(4-Aminophenyl)pyrrolidin-3-yl]-1-(3-trimethylsilanylpropyl)-3H-imidazol-1-ium chloride;
- 3-[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]-1-(3-trimethylsilanylpropyl)-3H-imidazol-1-ium chloride;
- [1-(4-aminophenyl)pyrrolidin-3-yl]ethyldimethylammonium chloride;
- [1-(4-Aminophenyl)pyrrolidin-3-yl]ethyldimethylammonium iodide;
- [1-(4-Aminophenyl)pyrrolidin-3-yl]propyldimethylammonium iodide;
- [1-(4-Aminophenyl)pyrrolidin-3-yl]propyldimethylammonium bromide;
- [1-(4-Aminophenyl)pyrrolidin-3-yl]propyldimethylammonium methosulphate;
- [1-(4-Aminophenyl)pyrrolidin-3-yl]butyldimethylammonium iodide;
- [1-(4-Aminophenyl)pyrrolidin-3-yl]pentyldimethylammonium iodide;
- [1-(4-Aminophenyl)pyrrolidin-3-yl]hexyldimethylammonium iodide;
- [1-(4-Aminophenyl)pyrrolidin-3-yl]heptyldimethylammonium iodide;
- [1-(4-Aminophenyl)pyrrolidin-3-yl]octyldimethylammonium iodide;
- [1-(4-Aminophenyl)pyrrolidin-3-yl]decyldimethylammonium iodide;
- [1-(4-Aminophenyl)pyrrolidin-3-yl]hexadecyldimethylammonium iodide;
- [1-(4-Aminophenyl)pyrrolidin-3-yl]hydroxyethyldimethylammonium chloride;
- [1-(4-Aminophenyl)pyrrolidin-3-yl]hydroxyethyldimethylammonium iodide.

- 25. The composition of claim 1, wherein the cationic tertiary para-phenylenediamine is chosen from the group formed by:
 - [1-(4-Aminophenyl)pyrrolidin-3-yl]trimethylammonium chloride;
 - 3-[1-(4-Aminophenyl)pyrrolidin-3-yl]-1-methyl-3H-imidazol-1-ium chloride;
 - [1-(4-Aminophenyl)pyrrolidin-3-yl](2-hydroxyethyl)dimethylammonium chloride;
 - 1'-(4-Aminophenyl)-1-methyl[1,3']bipyrrolidinyl-1-ium chloride.
- 26. The composition of claim 1, wherein the cationic tertiary para-phenylenediamine is chosen from the group formed by:
 - [1-(4-Aminophenyl)pyrrolidin-3-yl]trimethylammonium chloride and [1-(4-Aminophenyl)pyrrolidin-3-yl](2-hydroxyethyl)dimethylammonium chloride.
- 27. The composition of claim 1, wherein the oxyalkylenated carboxylic ether acid corresponds to the formula (Va)

$$R = \begin{bmatrix} O-C_3H_6 \end{bmatrix}_p \begin{bmatrix} O-C_2H_4 \end{bmatrix}_n O-CH_2-COO-A$$
(Va)

in which:

R represents a linear or branched C₈-C₂₂ alkyl or alkenyl radical, a (C₈-C₉)alkylphenyl radical or a radical R'CONH-CH₂-CH₂ where R' denotes a linear or branched C₁₁-C₂₁ alkyl or alkenyl radical,

n is an integral or fractional number ranging from 2 to 24,

p is an integral or fractional number ranging from 0 to 6,

- A denotes a hydrogen atom or signifies Na, K, Li, 1/2 Mg or a monoethanolamine, ammonium or triethanolamine residue.
- 28. The composition of claim 27, wherein the oxyalkylenated carboxylic ether acid of formula (Va) is such that R denotes a C_{12} - C_{14} alkyl, oleyl, cetyl or stearyl radical or a

nonylphenyl or octylphenyl radical, A denotes a hydrogen atom or sodium atom, p = 0 and n varies from 2 to 20 and preferably from 2 to 10.

- 29. The composition of claim 27, wherein the oxyalkylenated carboxylic ether acid of formula (Va) is such that R denotes a C_{12} alkyl radical, A denotes a hydrogen atom or sodium atom, p = 0 and n varies from 2 to 20.
- 30. The composition of claim 27, wherein the oxyalkylenated carboxylic ether acid represents from 0.5% to 15% and preferably from 1% to 10% by weight relative to the total weight of the composition.
- 31. The composition of claim 27, wherein it is a ready-to-use composition and such that the oxyalkylenated carboxylic ether acid represents 0.2% to 15% and preferably from 0.5% to 10% of the total weight of the composition.
- 32. The composition of claim 1, wherein the surfactant is a monoglycerolated or polyglycerolated surfactant.
- 33. The composition of claim 32, wherein the mono- or polyglycerolated surfactant is a mono- or polyglycerolated fatty alcohol of formula (Vb)

$$RO = \begin{bmatrix} CH_2 - CH(CH_2OH) - O \end{bmatrix}_{m}$$
 (Vb)

in which:

R represents a linear or branched, saturated or unsaturated radical containing from 8 to 40 carbon atoms and preferably from 10 to 30 carbon atoms; m represents a number ranging from 1 to 30 and preferably from 1 to 10.

34. The composition of claim 32, wherein the mono- or polyglycerolated fatty alcohol is selected from lauryl alcohol containing 4 mol of glycerol, lauryl alcohol containing 1.5 mol of glycerol, oleyl alcohol containing 4 mol of glycerol, oleyl alcohol containing 2 mol of glycerol, cetearyl alcohol containing 2 mol of glycerol, cetearyl alcohol containing 6 mol of glycerol, oleocetyl alcohol containing 6 mol of glycerol and octadecanol

containing 6 mol of glycerol, the C_8/C_{10} alcohol containing 1 mol of glycerol, the C_{10}/C_{12} alcohol containing 1 mol of glycerol and the C_{12} alcohol containing 1.5 mol of glycerol.

- 35. The composition of claim 1, wherein the cationic tertiary paraphenylenediamine(s) containing a pyrrolidine nucleus represent(s) from 0.001% to 10% by weight relative to the total weight of the composition.
- 36. The composition of claim 32, wherein the mono- or polyglycerolated surfactant represents from 0.5% to 15% by weight relative to the total weight of the composition.
- 37. The composition of claim 32, wherein it is a composition ready to use with oxidizing agent and such that the mono- or polyglycerolated surfactant represents from 0.2% to 15% by weight relative to the total weight of the composition ready to use with oxidizing agent.
- 38. The composition of claim 1, wherein the ratio between the weight concentrations of cationic tertiary para-phenylenediamines containing a pyrrolidine nucleus and surfactant selected from oxyalkylenated carboxylic ether acids, monoglycerolated or polyglycerolated non-ionic surfactants and mixtures thereof is less than 5.
- 39. The composition of claim 1, wherein the composition further comprises at least one cationic polymer.
- 40. The composition of claim 1, wherein the composition further comprises at least one thickening polymer.
- 41. The composition of claim 1, wherein the composition further comprises at least one additional surfactant chosen from the group formed by additional anionic surfactants, amphoteric or zwitterionic surfactants, additional non-ionic surfactants and cationic surfactants.
- 42. The composition of claim 1, wherein the composition further comprises at least one additional oxidation base other than cationic tertiary para-phenylenediamines containing a pyrrolidine nucleus, chosen from para-phenylenediamines, bis(phenyl)alkylenediamines, para-aminophenols, ortho-aminophenols and heterocyclic bases, and the addition salts thereof.

- 43. The composition of claim 42, wherein the additional oxidation base(s) is (are) present in an amount of between 0.001% and 20% by weight and preferably between 0.005% and 6% by weight relative to the total weight of the composition.
- 44. The composition of claim 1, wherein the composition further comprises at least one coupler chosen from meta-phenylenediamines, meta-aminophenols, meta-diphenols, naphthalene-based couplers and heterocyclic couplers, and the addition salts thereof.
- 45. The composition of claim 44, wherein the coupler is chosen from 1,3-dihydroxybenzene, 1,3-dihydroxy-2-methylbenzene, 4-chloro-1,3-dihydroxybenzene, 2,4-diamino-1-(β-hydroxyethyloxy)benzene, 2-amino-4-(β-hydroxyethylamino)-1-methoxybenzene, 1,3-diaminobenzene, 1,3-bis(2,4-diaminophenoxy)propane, 3-ureidoaniline, 3-ureido-1-dimethylaminobenzene, sesamol, 1-β-hydroxyethylamino-3,4-methylenedioxybenzene, α-naphthol, 2-methyl-1-naphthol, 6-hydroxyindole, 4-hydroxyindole, 4-hydroxy-N-methylindole, 2-amino-3-hydroxypyridine, 6-hydroxybenzomorpholine, 3,5-diamino-2,6-dimethoxypyridine, 1-N-(β-hydroxyethyl)amino-3,4-methylenedioxybenzene and 2,6-bis(β-hydroxyethylamino)toluene, and the addition salts thereof.
- 46. The composition of claim 44, wherein the coupler(s) is (are) present in an amount of between 0.001% and 20% by weight relative to the total weight of the composition.
- 47. The composition of claim 1, wherein the composition further comprises at least one direct dye.
- 48. The composition of claim 1, wherein the composition further comprises at least one hydroxylated solvent such as ethanol, propylene glycol, glycerol and polyol monoethers.
- 49. The composition of claim 1, wherein the composition further comprises an oxidizing agent chosen from hydrogen peroxide, urea peroxide, alkali metal bromates, persalts, peracids and oxydase enzymes, and preferably hydrogen peroxide.
- 50. A process for the oxidation dyeing of keratin fibres, wherein a dye composition as defined in claim 1 is applied to the fibres in the presence of an oxidizing agent.

51. A multi-compartment device, in which a first compartment contains a dye composition for dyeing keratin fibres, as defined in claim 1, and a second compartment contains an oxidizing agent.